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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/560,365

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EXAMINER

DAVIS, MARY ALICE

ART UNIT

PAPER NUMBER

3748

MAIL DATE

DELIVERY MODE

03/17/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/560,365	Applicant(s) HIWATA ET AL.	
	Examiner MARY A. DAVIS	Art Unit 3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8, 9, 11-13 and 16-18 is/are rejected.
- 7) ☒ Claim(s) 5-7, 10, 14, 15, 19 and 20 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/12/05; 11/16/07</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. The drawings are objected to because:
 - Figure 1 does not represent the embodiment disclosed in Figure 2, since the suction pipe 1 and suction space 3 is not in the correct position relative to the oil passage 10 and valve 11. Furthermore, the section lines P-P in Figure 1 does not correlate with the sections shown in either Figures 2 or 3, and Figure 1 does not show the oil collision part.
 - Figures 2 and 3 have a triangle which is labeled 3 in Figure 3. This triangle appears to be showing the direction of flow, and not a part of the scroll compressor. This triangle should either be removed or a label added to the triangle and disclosed in the specification that the triangle represents the refrigerant flow. Furthermore, the extension of the surface to this triangle should be removed.
2. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for

consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. *Claims 1 and 2 are rejected by any one of the following: under 35*

U.S.C. 102(b) as being anticipated by YOSHIYUKI ET AL (Japanese Patent

Publication JP 2002-310076) or by FUJIO ET AL (U.S. Patent 5,855,475), or under

35 U.S.C. 102(e) as being anticipated by HIWATA ET AL (U.S. Patent 6,827,563

B2).

Regarding claim 1, YOSHIYUKI ET AL, FUJIO ET AL, and HIWATA ET AL disclose:

- A scroll compressor (see Figures 1-3 and 5 of YOSHIYUKI ET AL; see Figures 8 and 14 – 17D of FUJIO ET AL; see Figures 1, 4, and 5 of HIWATA ET AL) in

which a fixed scroll part ((10) of YOSHIYUKI ET AL; (7) of FUJIO ET AL; (2) of HIWATA ET AL) and an orbiting scroll part ((11) of YOSHIYUKI ET AL; (13) of FUJIO ET AL; (4) of HIWATA ET AL) are meshed with each other (see Figures 1, 3, and 5 of YOSHIYUKI ET AL; see Figures 8 and 14 – 17D of FUJIO ET AL; see Figures 1, 4, and 5 of HIWATA ET AL) to form a compression chamber (Page 5, ¶0017, see Figures 1, 3, and 5 of YOSHIYUKI ET AL; (2a) of FUJIO ET AL; (5) of HIWATA ET AL), said orbiting scroll part is allowed to orbit in a circular orbit while restraining said orbiting scroll part from rotating by a rotation-restraint mechanism ((12) of YOSHIYUKI ET AL; (27) of FUJIO ET AL; (22) of HIWATA ET AL), a refrigerant is sucked, compressed and discharged while continuously varying a capacity of said compression chamber (Page 5, ¶0017 of YOSHIYUKI ET AL; Column 12, line 29 – Column 13, 50 of FUJIO ET AL; Column 5, line 26 – Column 6, line 33 of HIWATA ET AL), wherein

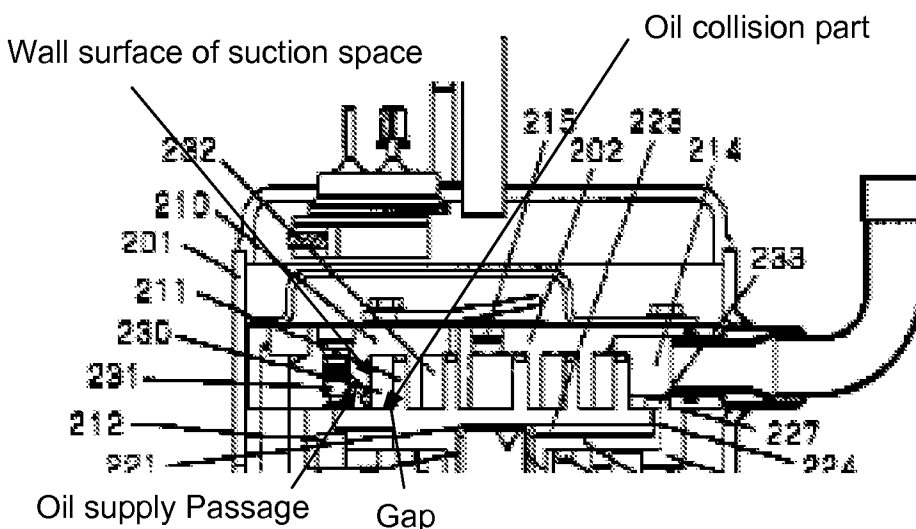
- an oil supply passage (see Figures 1, 3, and 5 of YOSHIYUKI ET AL, which shows an oil supply passage near (30, 230, and 330) and Page 6, ¶0020, Page 7, ¶ 0037, and Page 3, ¶0006; (43) of FUJIO ET AL; (10) of HIWATA ET AL) is formed in a suction space of said fixed scroll part (see Figures 1, 3, and 5 of YOSHIYUKI ET AL and see Page 10, ¶0027; see Figures 8 and 14 – 17D of FUJIO ET AL and Column 13, lines 14 - 33; see Figures 1, 4, and 5 of HIWATA ET AL and Column 5, line 45 – Column 6, line 29, Column 7, lines 19 - 61), and said suction space is provided with an oil collision part (the oil collision part is (11, 211, and 311) of YOSHIYUKI ET AL which is part of the orbiting scroll wrap;

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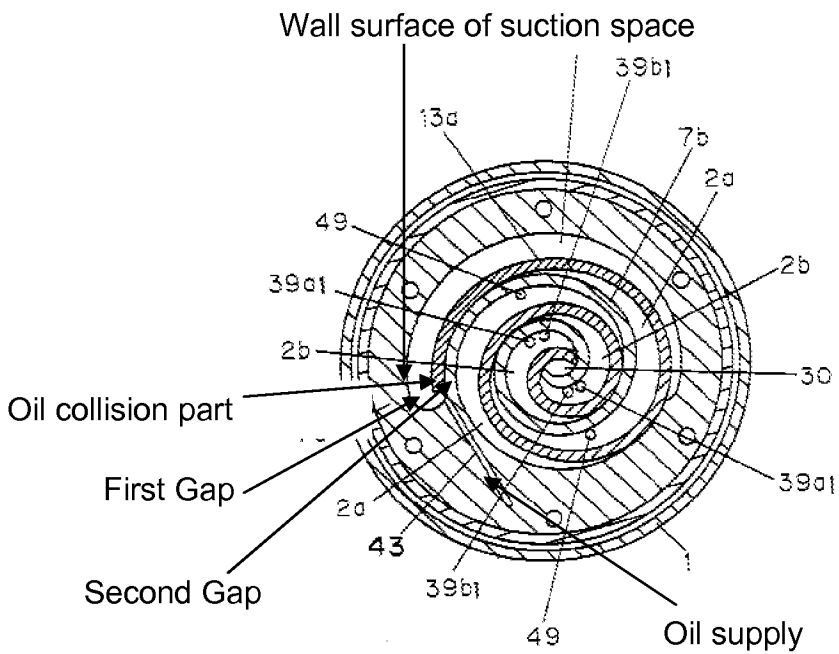
(13a) of FUJIO ET AL in which the oil collision part is part of the orbiting scroll wrap; (4a) of HIWATA ET AL in which the oil collision part is part of the orbiting scroll wrap).

Regarding claim 2, YOSHIYUKI ET AL, FUJIO ET AL, and HIWATA ET AL disclose:

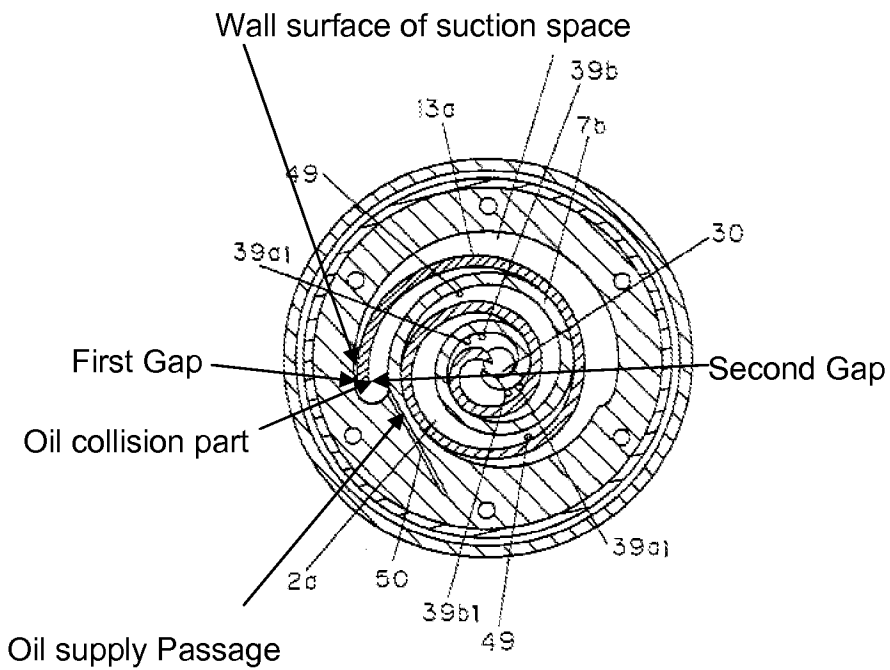
- a gap is formed between said oil collision part and a wall surface of said suction space (see marked up Figure 3 of YOSHIYUKI ET AL below; see marked up Figures 15 and 16 of FUJIO ET AL below; see marked up Figure 4 of HIWATA ET AL below).



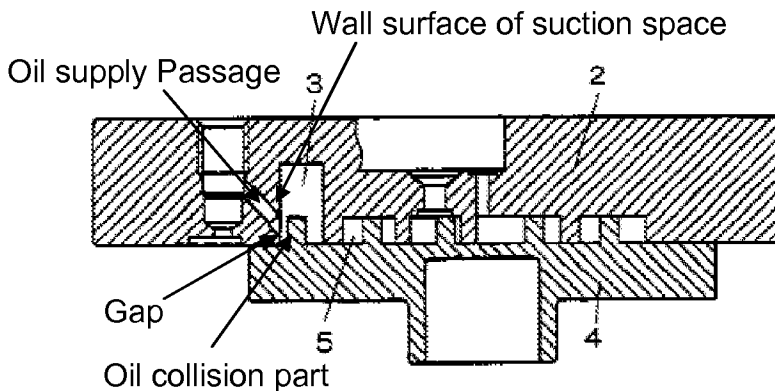
Marked up top half of Figure 3 of YOSHIYUKI ET



Marked up Figure 15 of FUJIO ET AL.



Marked up Figure 16 of FUJIO ET AL.



Marked up Figure 4 of HIWATA ET AL.

5. Claims 3-4 are rejected by any one of the following: under 35 U.S.C. 102(b) as being anticipated by FUJIO ET AL.

Regarding claim 3, FUJIO ET AL discloses:

- said gap comprises a first gap (see marked up Figure 15 above) formed from said oil supply passage toward a suction pipe and a second gap (see marked up Figure 15 above) formed from said oil supply passage toward said compression chamber (see marked up Figure 15 above), and said first gap is greater than said second gap (see marked up Figure 15 above).

Regarding claim 4, FUJIO ET AL discloses:

- said gap comprises a first gap (see marked up Figure 16 above) formed from said oil supply passage toward a suction pipe and a second gap (see marked up Figure 16 above) formed from said oil supply passage toward said compression chamber, and said second gap is greater than said first gap (see marked up Figure 16 above).

6. Claims 9 and 16-18 are rejected under 35 U.S.C. 102(e) as being anticipated by HIWATA ET AL.

Regarding claims 9 and 16-18, HIWATA ET AL discloses:

- carbon dioxide is used as said refrigerant (see ABSTRACT).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 8 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over any one of the following: YOSHIYUKI ET AL, FUJIO ET AL, and HIWATA ET AL in view of ESUMI ET AL (U.S. Patent 6,302,665 B1).

YOSHIYUKI ET AL, FUJIO ET AL, and HIWATA ET AL disclose the claimed invention however, fails to disclose the refrigerant that is used is an HFC-based refrigerant.

ESUMI ET AL teaches HFC-based refrigerants are commonly used in compressors (see Column 1, line 51 - Column 2, line 3).

It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to have used an HFC-based refrigerant in any of the compressors of YOSHIYUKI ET AL, FUJIO ET AL, and HIWATA ET AL, in order to use a refrigerant that does not destroy the ozone (see Column 1, lines 51-57).

9. Claims 9 and 16-18 are also rejected under 35 U.S.C. 103(a) as being unpatentable over either one of YOSHIYUKI ET AL or of FUJIO ET AL, in view of HIWATA ET AL.

YOSHIYUKI ET AL and FUJIO ET AL disclose the claimed invention, as discussed above, however, fails to disclose the refrigerant is carbon dioxide. HIWATA ET AL teaches using carbon dioxide as the refrigerant (see ABSTRACT).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used carbon dioxide as the refrigerant in the compressors of YOSHIYUKI ET AL or FUJIO ET AL, since it has been held to be within the general skill of a worker in the art to select a known refrigerant on the basis of its suitability for the intended use as a matter of obvious design choice.

Allowable Subject Matter

10. Claims 5-7, 10, 14-15, and 19-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Communication

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARY A. DAVIS whose telephone number is (571)272-9965. The examiner can normally be reached on Monday thru Thursday; 6:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mary A Davis/
Examiner, Art Unit 3748

/Thomas E. Denion/
Supervisory Patent Examiner, Art
Unit 3748